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Fire Management*notes*

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**Wildland
Fire
Prevention**



United States Department of Agriculture
Forest Service

Editor's note: *Fire Management Notes*, vol. 57, no. 4, will continue the focus on wildland fire prevention—particularly at the wildland-urban interface. The theme of that issue will be “Wildland Fire in Communities.” Look for Dr. Mary Jo Lavin's presentation to the insurance industry on this topic as well as articles about the fires of 1996 such as the Southwest's fire siege by Judith Downing and the Alaskan wildland-urban fires by Lee Clark and Kathy Hardy.

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On the Cover:



The aftermath of a wildfire affects the greater recreational community: Three developed campgrounds, a day-use picnic area, and many other dispersed camping areas and developed sites were destroyed by the Buffalo Creek wildfire. Photo: Gary Shaffer, Pike and San Isabel National Forests, South Platte Ranger District, Morrison, CO, 1996.

Firefighter and public safety is our first priority.

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PREVENTION: AN EMERGING SCIENCE



Billy J. Terry

During 1996, Americans experienced another record year for wildland fires, as we did in 1994, 1990, 1988, and 1987 when 4 to 7 million acres (1.6 to 2.8 million ha) of our Federal, State, and private wildlands burned. National Interagency Command Center statistics show that over 6 million acres (2.4 million ha) burned in 1996—at least 1.3 million more acres (500,000 ha) were consumed by fire than in 1994.

As for suppression costs, Federal expenses were nearly \$700 million. That figure in no way accounts for all the State and local government expenses for suppression, which could conservatively exceed \$1 billion.

Over 800 structures were lost in 1996—as many as in any previous year and more than most. The Federal Emergency Management Agency issued over 60 fire suppression assistance grants, a record number, to help with wildfire control. But, emergency money alone couldn't do the job.

By late August 1996, it was obvious firefighting resources were stretched to their limits. Less experienced wildland firefighters were pressed into service because government downsizing at all levels had removed the most experienced from the ranks. That year, only

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"To help win the 'war' against wildfires, managers can conduct assessments, educate homeowners, implement plans, and advocate safety."

19,000 fire personnel could be fielded before the military had to be called for help, in contrast with 25,000 interagency firefighters in 1994 and almost 40,000 in 1987. The ranks are clearly dwindling.

Trends toward bigger and more costly wildfires continue to accelerate. A question often asked is, "Why do we hear more about wildland fires today than 20 years ago?"

The answer is clear:

- More people live in or near the wildlands, and
- Fuel conditions (including understory growth and dead branches and leaves) are worse today due to drought, insects, disease, and social and economic pressures affecting the treatment of forest land.

It took a long time for our wildlands to get to this condition, and it may take a long time to overcome all the related issues staring forest and wildland managers in the face.

Prevention Changed in 1996

The 1996 fire season started in Texas and moved westward—even



The cast of "Smokey and the Careless Campers" play given by Vivian Elementary School, Denver, CO. All participants received a Smokey Bear water bottle acknowledging their efforts. Because a portion of the student body is hearing impaired, the play was simultaneously performed by speaking actors and in International Sign Language. Parents, teachers, and students from the school later held a "Make a Difference Day" service project for the residents of Buffalo Creek. Photo: Faith Duncan, Pike and San Isabel National Forest, South Platte Ranger District, Morrison, CO, 1996.

Alaska experienced a severe wildland-urban interface fire that year. The season finally ended in California in late October. It was shocking to realize that a high percent of all fires were started by people—most of these due to their own carelessness.

In early May, an interagency initiative was launched to put together groups of prevention specialists to help educate the residents in fire-prone areas about fire prevention and protection, mitigate hazards, and change human behavior. This initiative and the results the prevention groups produced made 1996 a unique year.

- Severity dollars, normally used to place additional firefighting resources in the field, were used in the Southwest and Alaska to reduce the number of human-caused fires. In the Southwest, human-caused ignitions dropped 75 to 80 percent in 6 weeks—concurrent with the actions of the prevention teams—with no change in weather or fuel conditions. Less than \$200,000 was spent on that effort (see Valen 1997).
- Citizen groups in Colorado, New Mexico, Arizona, and Alaska were assisted in mitigating hazards in their communities to protect improved property from the threat of wildfire (see Duncan 1997, Glenn 1997, and Hartog 1997).
- Interagency prevention operations coordinated between State and Federal agencies used an assessment process to evaluate risk, hazard, and values. Results from the evaluations were used to design strategic mitigation projects in high-risk areas to help stop fires if they did occur.
- Collaborative community fire-safety planning was initiated in



Slabs from homes burned during the Malibu wildland-interface fire of October 1993 serve as grim reminders of the need for community fire prevention programs. Photo: Billy Terry, USDA Forest Service, Washington, DC, 1994.

Colorado, New Mexico, Montana, Arizona, and Alaska. Communities took the plans they helped to build and put them into action.

- A new interagency plan was established to incorporate wildland fire prevention into the national dispatch system and to establish criteria for the use of severity funding for prevention.

All of these efforts helped to keep wildland firefighters out of structural firefighting situations and illustrated how communities can accept some of the responsibility for safety from wildland fires. When one considers the dramatic reduction in human-caused fires during and following the varied prevention activities, it is clear that wildfire prevention efforts also held down suppression costs.

Opportunities To Win the War Against Wildfires

This fire season presented a forum for fire managers to present a convincing case for silvicultural and other fuel treatments near wildland-urban interface areas. It also

provided the chance to share the responsibilities for reducing wildfire losses of all types, improving protection of communities, and returning the ecosystem to a healthy state.

So what specifically can managers do before the fires burn? To help win the “war” against wildfires, managers can conduct assessments, educate homeowners, implement plans, and advocate safety:

- **Conduct assessments:** Take the time to use technology and newly developing assessment tools to identify high-value, high-risk, and high-hazard areas. Conducting such assessments can promote cooperation among all affected parties down to the homeowner. Look for ways to support a prevention staff in efforts to protect high values through risk and hazard reduction.
- **Educate:** Tell the story of ecosystem health and how it is maintained. Education is particularly

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necessary in areas that are considered to be high value, high hazard, and high risk.

- **Implement plans:** To assure success, open the land management process up to interested outside parties and help them to implement their portions of the plans on adjacent land and in their communities. Fire and resource planning can be stretched beyond any jurisdictional boundary to include all ecosystems and communities.
- **Advocate:** Where authorities end, support the actions of others to improve the safety of communities and resources. Our leadership—provided through plans, fuel management, and education—will set examples that lead to the correct collaborative solution.

Big Return on a Small Investment

Since the implementation of the Federal Wildland Fire Management Policy (USDI and USDA 1995) and the establishment of FIRE 21 (Apicello 1996), every wildland fire manager is responsible for the improvement of ecosystem health and firefighter safety through the effective use of fire in ecosystems. Whether one is responsible for fire management, natural resources, a community, or all of these, fire prevention planning and execution can produce a huge return on a small investment.

- Forest and fire prevention plans based on concepts of ecosystem management and community and firefighter safety will supply clear direction.
- Inclusion of local, State, and Federal partners in the planning process will provide greater understanding of wildland fire issues and produce new solutions at all levels.



A firefighter's "field day" such as this one in Colorado can provide the perfect opportunity to inform the public about wildfire prevention. Photo: Amy Small, Pike and San Isabel National Forest, South Platte Ranger District, Morrison, CO, 1996.

- The broader understanding gained will allow for enhanced fuel treatment possibilities near interface areas. These pre-suppression and protection measures will lead to the reduced threat of wildland fire in the interface, reduced suppression costs, a healthy, well-balanced ecosystem, and increased firefighter safety. In effect, it will fulfill the elements of FIRE 21 and the Federal Wildland Fire Policy.

There is no way we can deliver an edict at the national level and expect major and consistent results at the grassroots level. From our experiences in 1996, we've learned that the most effective prevention efforts occur in communities—precisely applied by the hands of skilled professionals. When prevention experts help communities help themselves, we achieve the lasting effects of wildfire prevention efforts.

Will there be more record wildland fire years in the future? All of us who are in any way involved with

wildland fire are in control of that answer to a large extent. Proactive steps targeted at specific, planned prevention objectives will help shape the ultimate outcomes. It is up to each forest and wildland manager to work with our inter-agency partners in selecting the right prevention "tools" to meet specific needs and, once selected, to apply them in the most effective manner we can.

Literature Cited

- Apicello, Michael G. 1996. FIRE 21—Fire Management in the 21st Century. *Fire Management Notes*. 56(3): 4-5.
- Duncan, Faith. 1997. How a community heals: Lessons learned from Buffalo Creek. *Fire Management Notes*. 57(3): 11-14.
- Glenn, Merle. 1997. Never rule out measures of prevention. *Fire Management Notes*. 57(3): 9-10.
- Hartog, Jeannette. 1997. Wild flowers rather than wildfires. *Fire Management Notes*. 57(3): 27.
- United States Department of the Interior; United States Department of Agriculture. 1995. Federal Wildland Fire Management Policy and Program review. Final report. Washington, DC: U.S. Department of the Interior and U.S. Department of Agriculture. 45 p.
- Valen, Robert. 1997. Public outreach programs = wildland fire prevention. *Fire Management Notes*. 57(3): 7-8. ■

PUBLIC OUTREACH PROGRAMS = WILDLAND FIRE PREVENTION

Robert Valen



Unprecedented dry conditions early in the 1996 fire season created record high Energy Release Component figures in the Southwestern United States. Weather projections indicated below average precipitation and higher than normal temperatures. Hence, in the spring of 1996, fire managers with the interagency Southwest Fire Management Board (SFMB) established the Southwest Fire Prevention Team to take action in fire prevention in the geographic area of Arizona, New Mexico, and west Texas.

The response of the SFMB was historic—this was the first time such a mobilization of a fire prevention team occurred. First, as stage one of the fire prevention effort, an assessment team was brought in that produced two important documents—an assessment report and a communications plan. Next, the SFMB created a Delegation of Authority and proceeded with full mobilization of the fire prevention team to the Southwest.

Using the structure and operations of the Incident Command System, the prevention team's core overhead included an area coordinator, finance chief, logistics chief, situation unit leader, and public affairs officer. Zone prevention specialists (the Southwest Area has 11 zones)

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made day-to-day field-level decisions with the assistance and guidance of host agencies.

Forward With the Message

As the Southwest Fire Prevention Team public affairs officer for 32 days, I can attest to the success of our public outreach efforts. The key to any outreach program is a willing, listening public and accepting and willing partners to carry the message. We quickly got the "ears" of the public in our area of responsibility. Wildland fires had already burned some homes, and looming on the horizon were July Fourth celebrations. These facts created some obvious impacts with the general flow of public information. Media attention focused on the situation quickly, giving constant updates and in-depth reporting of fire danger and weather conditions.

We actively sought private sector partners who could assist us and expand the reach of our message to the broadest possible public, including those planning to visit the region. The Internet and those managing Internet sites for State agencies provided support and guidance. Arizona State Parks Internet Home Page carried current fire information on conditions in that State as a cooperative effort. The New Mexico Energy, Minerals, and Natural Resources Department carried similar web page information. The web site managers gave their time and ef-

fort to make information available on this newer information venue.

Many excellent products, often "standard fare" for public outreach personnel, were completed and sent to diverse outlets. These products included press releases, newspaper and radio public service announcements (PSA's), camera-ready advertisements used by newspapers and magazines, general information flyers, public service handouts, and various letters and messages.

Deliver the Package

Support from the private sector in the Southwest was good. For instance, the United Parcel Service agreed to have their rural route delivery personnel hand out a fire prevention-wildland property protection door hanger in Arizona and New Mexico. A major State utility service, a city water provider, and a regional cable television company assisted by adding fire prevention statements drafted by the team to their billing statements.

To the Movies?

A suggestion for disseminating fire prevention messages in the future came out of the 1996 experiences. Because movie theater patronage has gone up dramatically in the last 5 years, a well-orchestrated prevention message could be screened as film trailers that would reach very large, "captive" audiences. Land management agencies

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with theater companies as partners could identify and target market areas during the "off season," based on predicted fire activity. Various theaters could then screen PSA's during expected high fire seasons (differing from early spring through late summer in various parts of the country).

Success!

Data support the establishment of the Southwest Fire Prevention Team and its impact on human-caused wildland fire prevention

(Southwest Fire Prevention Team 1996). There were dramatic drops in human-caused wildfires as well as acres burned during our tenure in the Southwest.

I extend my professional encouragement to area coordination center managers and fire management board members to strongly consider using fire prevention teams again in the future as a proactive and effective means to combat fires started by people. Such teams add a broader knowledge base to help

those living in the wildland-urban interface to protect themselves and their property.

For more information, contact Robert Valen by phone at 409-839-2689, extension 231, or e-mail bob_valen@nps.gov

Literature Cited

Southwest Fire Prevention Team. 1996. Southwest Fire Prevention Team accomplishments & activities: Interim report. Unpublished report on file with Billy J. Terry, Fire and Aviation Management Staff, USDA Forest Service, Washington, DC. 48 p. ■

SPARK ARRESTER UPDATE AND GUIDE NOW AVAILABLE

Nicole R. Higgason

The updates to the Spark Arrester Guides (SAG) have been published. The SAG lists qualified general purpose, locomotive, and multiposition small-engine (MSE) spark arresters. MSE spark arresters include chain saws, trimmers, and brush cutters.

Orders—from local, State, and Federal cooperators only—may be made for the following guides

and video (allow 4 weeks for delivery).

NFES #1363—"General Purpose and Locomotive Spark Arrester Guide," vol. 1, May 1997, \$2.66 per copy.

NFES #2363—"Multiposition Small Engine Spark Arrester Guide," vol. 2, April 1995, \$2.68 per copy.

NFES #2237—"Spark Arrester & the Prevention of Wildland Fires," 1992, 68-minute video tape, VHS size, \$2.63 per copy.

To order, send a requisition or purchase order to the address below with order numbers included. They request that you do not phone in your order nor send cash, checks, or money orders with your order.

Order from: National Interagency Fire Center (NIFC), Attn: BLM Warehouse, Supply Office, 3833 S. Development Avenue, Boise, ID 83705.

Any billing questions may be directed to NIFC Finance Office, tel. 208-987-5566. Questions regarding ordering procedures may be addressed to the NIFC Great Basin Cache Supply Office, tel. 208-387-5104.

Technical questions should be directed to Ralph H. Gonzales, USDA Forest Service, San Dimas Technology and Development Center, 444 East Bonita Avenue, San Dimas, CA 91733, tel. 909-599-1267, extension 212.

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NEVER RULE OUT MEASURES OF PREVENTION



Merle Glenn

The winter of 1995-96 never arrived on the Lincoln National Forest in southwestern New Mexico; rather, it ushered in a stifling drought. Months of persistent winds and no significant moisture sucked the life out of the forest. Thirsty trees and plants drooped forlornly while fall grasses dried to tinder, and no new green grass sprouted. By February 1996, the threat of fire was climbing each day and wildfires were hitting the neighboring States of Oklahoma and Texas with a vengeance.

Unplanned Fire

Early spring and late fall are the traditional times for prescribed burning in the forests of southeastern New Mexico. Prescription burning is actively used for forest management in the Southwest; it is used extensively by the Mescalero Apache Reservation's foresters. With much understory burning completed for fuels reduction on reservation lands, it seemed highly unlikely that a wildfire would start, let alone spread in February. But nature had other ideas.

Slash piles that had burned weeks before on the reservation were fanned by a 60-mile-per-hour (97-km-per-h) wind with gusts up to 70 miles per hour (113 km per h). A spark remaining in some heavy fuels was blown to life and soon the fuels scattered into a series of

Even the most learned statistics gurus have difficulty measuring what does not happen. However, a comparison of what has occurred before and the theory of what "might" have happened—based on known factors—seems to be valid. If so, perhaps we **can** measure the results and values of fires that are prevented.

wildfires. Thus the 1996 fire season began in New Mexico.

Fire Conditions: Extreme

The forest was so dry that it seemed anything warmer than a sparkling personality set off a blaze! Unfortunately, human-caused fires were the order of the day. Temperatures climbed, winds picked up, and residents in the wildland-urban interface packed their valuables in case they had to be evacuated. Fire restrictions were instituted and distribution of prevention messages escalated.

Severity funds, critical to the fire management scheme, allowed the placement of a National Functional Area Support Team (FAST) on the Lincoln National Forest. The FAST assisted with fire protection and emergency response education in the communities. Additional severity resources were assigned for initial attack.

When a section of the Village of Mescalero, NM, was burned over, the media and political delegations

arrived in droves. They had extended stays in Arizona and New Mexico as large, catastrophic fires hammered the Southwest.

To consolidate interagency fire prevention efforts, a National Southwestern Fire Prevention Team was activated for the first time (see Valen, this issue). Huge plumes of smoke, convoys of firefighters and their equipment, fire news in the media, air support, and the skeletal remains of burned structures caught the public eye. Along the forest corridors, the Smokey Bear fire condition signs were posted—"EXTREME." Seeing was believing.

Forest Closure: An Effective Prevention Tool

Unrelenting extreme fire conditions warranted taking stringent steps to protect the Lincoln National Forest and the wildland-urban interface. Management studied the situation and determined that closing the forest would be the best prevention measure, so 70 percent of the Lincoln National

Merle Glenn is a public affairs officer for the USDA Forest Service, Lincoln National Forest, Alamogordo, NM.

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Forest was closed on May 20, 1996. The public was given a few days notice via a media release, which included a strong message on taking personal responsibility for conservation of national forests, fire prevention, and creating defensible space around structures on private property. A series of signs, media releases, one-on-one and group presentations, posters and exhibits, and numerous public service announcements saturated the communities in and around the Lincoln.

Public Response

Enforcement of the closure made forest employees heroes or villains, depending on individual percep-

tion. Throughout the 42-day closure, tourists questioned the forest daily about recreational opportunities. Gratification came when the majority of wildland-urban interface residents expressed relief that the forest was closed, reducing the chance that a human-caused fire would burn their home or business. A notable benefit of the closure was the ability of initial attack crews to get right to the fires with no people in their way. In one 3-day weekend, they successfully doused 77 lightning starts, most of which got no bigger than an acre (.4 ha). An additional benefit happened in the Village of Ruidoso, NM, nestled in the heart of the Lincoln National Forest. As a

followup to the FAST training and because of agency and community cooperative agreements, the village instituted a new, liberal policy for tree removal in their wildland-urban interface—truly an ongoing measurable benefit!

One result of these prevention methods was that **no human-caused fires occurred during the forest closure**. Considering the extended period of extreme fire conditions, this is remarkable. When the monsoons arrived in late June, the forest was there to drink up the water. The residences and businesses had survived the threats brought about by drought and extreme fire conditions for another season. Based on historic data, this was not a predictable outcome for this fire season.

Measurable Conclusions: From Inches to Giant Strides

- Teaching prevention and protection during abnormal circumstances such as extreme fire conditions or incidents of active fire is **measurably effective** in the reduction of human-caused fire.
- In severe fire conditions, cooperative partnerships and agreements are invaluable. They go beyond standard interagency fire management planning and pull together communities in a shared stewardship of fire prevention and protection. ■



During the 42 days that the Lincoln National Forest was closed during the summer of 1996, no human-caused wildfires occurred. (Photo: Bob Beckley, Lincoln National Forest, Alamogordo, NM, 1996. [Editor's note: Beckley was on special assignment on the Lincoln; he recorded the ramifications of the drought and actions taken for fire.])

How a Community Heals: Lessons Learned from Buffalo Creek



Faith L. Duncan

The summer of 1996 saw the Buffalo Creek Fire consume approximately 12,000 acres (4,860 ha) of public and private land on the South Platte Ranger District, Pike National Forest. In mid-May, a campfire left unattended ignited a fire that was fed by warm, dry winds. It spread across almost 20 square miles (52 km²) of mid-elevation mixed Douglas-fir and Ponderosa pine forest within half an hour's drive of Denver, CO. Within 2 months of the wildfire's end, an unusually heavy rainfall caused severe flooding in the Buffalo Creek drainage. Two men lost their lives during the flood. Losses of buildings and of basic services (such as road access, safe drinking water, and telecommunications) occurred in the wildland-urban interface community of Buffalo Creek.

The lessons recounted in this article—and shown as subheads—are lessons I learned at Buffalo Creek as the public involvement coordinator for the rehabilitation efforts. The healing of a community is a daunting objective, and the most significant specialists needed to heal these affected ecosystems are the community members themselves. These lessons,

"The most significant specialists needed to heal these affected ecosystems are the community members themselves."

taken together, are offered as suggestions for future community involvement efforts in wildfire prevention and rehabilitation.

Let People Do What They Need To Do

People have the ability to react very quickly and effectively during catastrophic events—their fight-or-flight nature dissolves into ex-

haustion, fear, and anger, and then productivity, organization, focused thoughts, and deeds. People adapt by imposing structure on chaos. As a public involvement coordinator, I assessed where the community members were in the process of adapting to change and figured out how I could work within the existing successful community structures. A highly energized group of townspeople and community leaders had formed the Buffalo Creek Crisis Committee and were asking to be listened to—so our incident team listened. Incident Commanders and information officers immediately began attending Crisis Committee meetings held each morning in the home of one of the

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District Ranger Pamela DeVore conducts a tour of the fire area for community residents soon after the fire is declared completely out. Issues raised in the question-and-answer sessions were recorded and presented in written form as the first "Issues and Concerns" document for the burned area emergency rehabilitation. Photo: Bob Piper, USDA Forest Service, Pike and San Isabel National Forests, South Platte Ranger District, Morrison, CO, 1996.

Dr. Faith Duncan is an interpretive specialist for the USDA Forest Service, Pike National Forest, South Platte Ranger District, Morrison, CO. Since the Buffalo Creek incidents last summer, she has been the public involvement coordinator for the Buffalo Creek Fire and Flood Rehabilitation Team. She is also a Type II information officer and a practicing anthropologist.

community leaders. Each meeting brought forth new issues to be discussed and actions to be implemented. In this way, the members of the community and the agencies merged many rehabilitation goals, objectives, and action plans.

Be Visible and Be Available

It was obvious from our first interactions with community members affected by the wildfire and floods that agency presence on site was extremely important. After all the hubbub of fire crews and media attention and road gawkers had passed, the second lesson learned was that all team members, agency and community, need to make themselves available to each other. Agency representatives need to be visible at community meetings, tours, and fundraising events. All members need to be prompt and courteous about returning phone calls. In Buffalo Creek, the first tours given of the fire area were part of a community open house and attracted over 300 local residents. Forest Service District and other agency representatives an-

swered questions concerning the fire, led auto tours to view spots, received input about potential rehabilitation actions, and met with friends and neighbors in the neutral atmosphere of the community center. Traveling exhibits on wildfire that were to be used at many subsequent community events were displayed first at the open house. Interest group roundtables and smaller working sessions, e.g., summer homeowner, new fire station, and economic development working groups, took issues and concerns raised at such meetings and followed up on them. Volunteers were coordinated at community and Federal levels to accomplish all the many rehabilitation projects.

Establish and Strengthen Communication Lines

Establishing communication lines requires active participation—strengthening communication lines requires active listening. During many of our smaller listening sessions, I would call for clarification, then read my minutes back to

the audience to make sure I heard what I “thought” I heard. Crisis Committee members in the community would frequently hear from me an average of once a week. For the first 3 months, I produced a weekly information-sharing tool for the community members called the “Rehab Review.” This two-sided flyer documented rehab events, issues of concern, primary contacts and phone numbers, safety messages, volunteer opportunities in rehab, and special events. The “Rehab Review” was a community and agency combined effort, delivered to 10 specific community contacts or locations each week. This flyer was also useful for media briefing packages, VIP tours, and for inclusion in grant proposal packages to benefit community revitalization projects.

Model the Behaviors You Most Want People To Practice

It is easy to be angry and frustrated when dealing with the anger and frustration of others. This reaction, however, doesn’t serve to heal a community effectively. You can remain positive by alerting others about opportunities to get critical tasks accomplished. For example, encourage community members to be included in all public functions involving the fire area. Let them see the rehabilitation techniques up close. Let them discuss their experiences with students and scout groups. Let the positive results of these interactions be a part of the community’s healing. For instance, at an urban school in Denver—Vivian Elementary School—Jennifer Pietrus involved students, teachers, and parents in replanting on private lands damaged by the fire. Managers at a local retail store organized a fund raiser at a new



Evidence of the success of aerial seeding and natural regrowth. 4,000 acres (1,620 ha) were seeded with sterile white oats within 4 weeks of the fire being controlled. Narrow-leaved yucca plants were some of the first to burst forth from burned stems. Photo: Bob Piper, USDA Forest Service, Pike and San Isabel National Forests, South Platte Ranger District, Morrison, CO, 1996.



Saturdays after the fire and flood meant volunteer days in Buffalo Creek. Volunteers checked in and received safety instructions; they worked in pairs, filling gravel bags and making check dams in headwater drainages to reduce the velocity of downslope erosion. Photo: Amy Small, USDA Forest Service, Pike and San Isabel National Forests, South Platte Ranger District, Morrison, CO, 1996.

store opening that contributed over \$2,000 to help purchase seed and equipment for the community. As an agency representative, model the behaviors you most want people to practice; help them be persistent in their goals, and you'll see them become increasingly creative in such activities as fundraising and overcoming the devastation caused by wildland fire.

Act for a Reason and With Reason

Planning is one of those processes that puts the doers of any team off. However, having a plan, revising and refining it as you go along, and sharing these changes with every-

one in the agency and the community are important. After many of the recreation areas and trails were closed to public use because of the fire, many residents in the area complained of visitors crossing over private lands and disobeying "Areas Closed" signs. Incident information officers were able to have the closures publicized by specific media representatives who focused on certain popular types of recreation after the fire and flood. Having a communication and public involvement plan that listed the significantly affected groups assisted in locating these targeted media conduits. The message got out, and the transgressions slowed.

Publishing the key trail closures in the "Rehab Review" reinforced these public actions with local residents. And flyers and informational messages about respecting private land boundaries were used during popular events near the fire area boundary such as the December tree sale.

Practice Anthropology in Community Relations

I attended the opening ceremonies at a new local high school on my district in September. While placing a welcome letter in the teachers' and administrators' mail boxes, I realized I had the perfect opportunity to introduce the students and teachers to their own backyards in the form of the Buffalo Creek fire area. And so did some of the science teachers that I went to visit that day! Two months later, every student in the school had become a participant in the adoption of Shinglemill Drainage area in Buffalo Creek. Most spent a field day at the site accompanied by agency specialists and community residents. The community and academic support for the beginning of this 10-year adoption has been fantastic—we hope this will be a project that all Conifer High School students will remember when they look back on their school experiences. Scientists and field personnel talked avidly about research potential; residents talked about their experiences during the fire and flood. One inquiring mind on my field trip said, "Wow, that was amazing! I wonder what it will be like next year." As the two of us picked our way carefully down the slope, we gazed across a barren ridge that was beginning to sprout in narrow-leafed yucca, forbs, and hand-seeded grasses. We walked

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downwards, past the drainages filled with gravel-filled bags, until we reached the County Road. "I don't know what it will be like next year," I said, "but why don't you come back here next semester and find out?"

The Future

As winter snows melted in the high country, the Buffalo Creek Rehabilitation Team—agency and community members alike—continued efforts to work in the ecosystems and communities affected by the fire and flood. In November, the new North Fork Fire Protection District's Buffalo Creek Fire Station opened its doors. Over 1,000 people have worked on various volunteer projects related to the fire since May of 1996. Thousands of acres of burned forest have been seeded by hand or by air in two critical watersheds. Thanks to private donations of high-quality water pipe and expert engineering, excellent grant writing and lots of persistence and hard work, the townspeople again have safe water to drink. Taking advantage of the teachable moment meant that Smokey Bear and I visited over



The aftermath of the flood, looking west along Buffalo Creek from what is left of County Road 126. Evidence of the earlier wildfire can be seen on the ridgetop in the distance. Over 8 feet (2.4 m) of sediment aggraded in the drainage and in and around the town. Photo: Dave Grove, USDA Forest Service, Pike and San Isabel National Forests, South Platte Ranger District, Morrison, CO, 1996.

6,400 students and talked about wildfire prevention. Each wildfire prevention assembly also included education about the significant and proper role of fire in Front Range ecosystems and the importance of prescribed burning in the management of such disturbed ecosystems. The district reinitiated its prescribed fire program in December and distributed posters to be posted in local businesses and community centers related to where, when, and why the pre-

scribed fires were being undertaken. At present, the team is looking forward to the future and to working together to heal Buffalo Creek.

Questions concerning this article or the rehabilitation can be sent to Dr. Faith L. Duncan, South Platte Ranger District, 19316 Goddard Ranch Court, Morrison, CO 80465, tel. 303-275-5627, or e-mail her at /s=f.duncan/ou1=R02F12A@mhs-fswa.attmail.com. ■

STIHL CHAIN SAW ALERT

Ariana M. Mikulski

Stihl, Inc., is voluntarily recalling more than 256,000 of their model 029 and 039 chain saws that have serial numbers of 235153631 or lower. The gas cap on some of

these saws can loosen and leak fuel during use, causing a fire and personal injury to its operators. Nine reports of burn injuries have already occurred.

The model numbers for these saws are located on top of the engine. The serial number can be found in the housing above the bumper spikes and directly under the front-hand guard.

Stihl suggests that the owners of these saws immediately stop using them and return them to their dealer for a free replacement gas cap. The saw owners should also have their dealer check the ignition ground wire, a cause of a previous recall of some of these saws.

For additional information, contact an authorized Stihl dealer or call Stihl, Inc., at 800-GO-STIHL or 800-467-8445.

Ariana Mikulski is a student at Michigan State University. As a volunteer for the USDA Forest Service, North Central Forest Experiment Station in East Lansing, MI, she served as an intern and assistant editor for *Fire Management Notes* from April through August of 1997.

"SMOKEY'S ANIMAL FRIENDS": PARTNERS IN PREVENTION



Nancy Lyn Porter

The USDA Forest Service has over the years enjoyed working with many partners to spread the message of being careful with fire in our wildlands. Partners make it possible to interact with many more individuals and groups than agency or interagency prevention personnel can do alone. Since 1993, one of the Pacific Southwest Region's partners—Knott's Berry Farm, a theme park in Buena Park, CA—has been assisting the region in reaching very large and diverse audiences.

Through a stage show called "Smokey's Animal Friends," presented four times daily, children and adults learn how to prevent carelessly caused wildfires. The presentation features Smokey Bear interacting with such southern California native species as a red-tailed hawk, bobcat, and raccoon as well as animal friends from forests in other parts of the world. Through a friendly, "learning is fun" atmosphere, Knott's Berry Farm helps audiences of all ages gain a better understanding of how animals respond to their physical environment.

In addition to the professionally scripted and staged presentation, Knott's visitors can participate in interactive, "hands-on" activities related to conservation education at the park's Wilderness Nature Center. Also, special activities tie

Knott's Berry Farm, a Pacific Southwest prevention partner, teaches visitors from at home and around the world what they can do to prevent carelessly caused fires that damage our wildlands.

the Nature Center's programs to a trip to the nearby San Bernardino or Angeles National Forests as part of Knott's Junior Ranger Programs. During the wildfire prevention presentations, rangers talk with participants about healthy forest ecosystems. They also explain the use of planned, low-level fires as a "tool" to help prevent future catastrophic fires in wildlands. Thus, through a partnership with one segment of the entertainment industry, we have been able to help educate the public about the many faces of fire.

Recently children in southern California have been enjoying the program "Smokey's Animal Friends" in their classrooms. As part of a Knott's "Adventure in Education" program, camp counselors not only perform, but they also ensure that each school receives a fire prevention education curriculum, which was created with Forest Service input.

According to Dawn Davey, area supervisor at Knott's, Walter Knott has always been committed

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Smokey Bear and some of his human friends including Knott's Berry Farm "Ranger Sue" at Big Foot Rapids Wilderness Area. Photo: © Knott's Berry Farm, Buena Park, CA. 1996.

Nancy Porter is the prevention specialist for the USDA Forest Service, Pacific Southwest Region, Mather, CA.

to educating the public, beginning with the creation of Ghost Town. She says, "This spirit still continues to be the backbone for our successful 'Adventure in Education' programs—now in the 10th year."

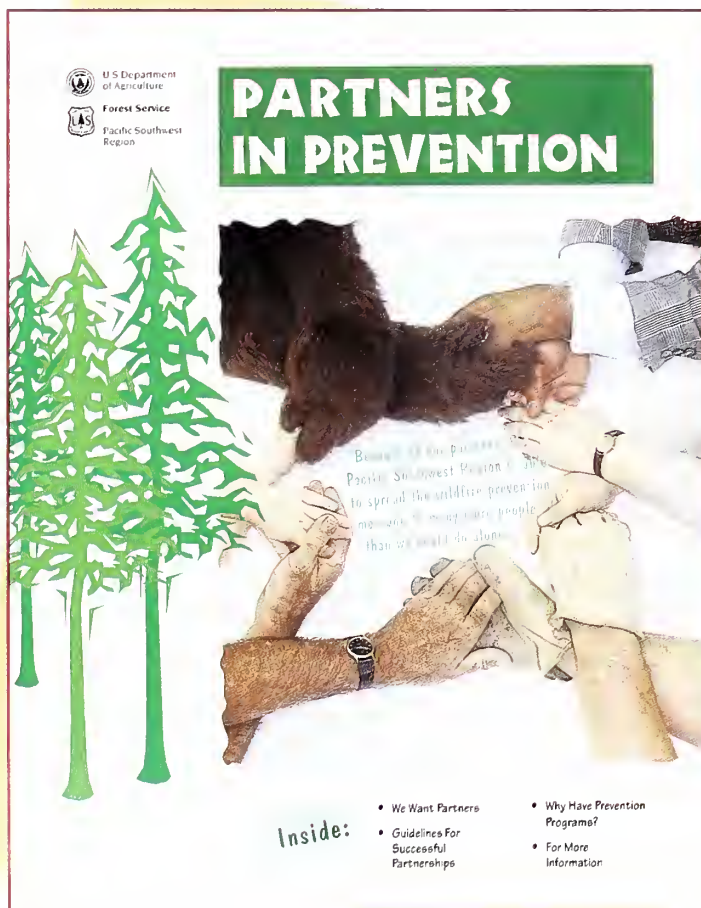
Partners do make a difference in communicating with local communities. Sometimes, as experienced in the partnership with Knott's Berry Farm, we can reach out much further—even to visitors from around the world.

Because partnerships generally take a long time to develop, when we are approached by potential partners, we work with them as though we were building a long-term relationship and friendship. Of course, it is very gratifying to get a note from partners such as Knott's that reads: "Our partnership with the Forest Service has

not only helped to promote our environmental message but has also resulted in many new friendships for other members of my staff and me. It has been fun to see

Smokey's appeal—not only with the children, but also with adults. Everyone loves Smokey Bear!"—from Dawn Davey.

We have found it is important at the outset to be aware of how the potential partner's interests fit into our program. We have found that our partners care about many of the same issues as members of our agency. From our experiences, we have developed some guidelines for formalizing partnerships. If you are interested in more information on successful partnerships, the Pacific Southwest Region has developed a "Partners in Prevention" brochure that we would be glad to share. For more information, please contact Nancy L. Porter, USDA Forest Service, 3735 Neely Way, Mather, CA 95655-1000, tel. 916-364-2800. ■



The "Partners in Prevention" brochure that the Pacific Southwest Region has developed. Contact Nancy L. Porter for more information.



This Certificate is awarded to

*This _____ day of _____, 19____,
For attending SMOKEY'S ANIMAL FRIENDS
school assembly program.*

Knott's awards this certificate to all children who attend "Smokey's Animal Friends" program in their own school. Illustration courtesy of Knott's Berry Farm, Buena Park, CA, © 1997.

Is SMOKEY WRONG?

Jimmye L. Turner



A lot of people seem to enjoy coming up to me and asking, "How does it feel, now that we know Smokey was wrong all these years?"

I usually try to look surprised and ask them in return, "Wrong in what way?"

They then carefully explain to me that we "now know" that not all fire is bad and that fire is a tool in managing the forest—especially in removing logging slash, preparing a seedbed, and promoting grazing by wildland animals. They explain, furthermore, that not all fires should be suppressed and our "heavy-handed" management of fire is a source of damage and major changes in the forest.

I usually nod and agree with them. "Yes, fire is a tool and also a natural part of the forest ecosystem, and yes, we use fire to remove logging slash and promote grazing." Then, in return, I ask them:

"How is Smokey Bear wrong?"

"Which Smokey poster declares 'All fire is bad'?"

"When did Smokey say 'Fire is not a part of the ecosystem'?"

"Did Smokey instruct someone to 'Suppress all fires'?"

"Does Smokey forbid us from using fire as a tool?"

I think these questions are easy to answer, but some people have a

"Do civilian visitors to your forest search for areas needing fire to regenerate growth or to improve the habitat for wildland animals?"

hard time with them. Of course, there is no Smokey poster or commercial that says "All fire is bad." I know, I looked. There is no record of Smokey asserting "Fire is not a part of the ecosystem."

Smokey has never been utilized to train firefighters or fire managers to suppress all fires indiscriminately. Smokey does not now—nor has he ever—forbidden or condemned the USDA Forest Service from using fire as an ecosystem management tool.

Smokey is not a symbol to transmit messages from forestry professional to forestry professional. Smokey is a symbol to civilians, forest visitors, and especially to children; he warns them of the dangers of carelessly caused wildfires. Simply that—Smokey is aimed at civilians!

Do the civilian visitors to your forest say to each other: "Look, Dear, acres and acres of deep logging slash! Let's camp here! If our campfire gets away, it's good for the ecosystem and will create a fine seed bed to encourage reforestation!"? The visitors to our forest in Washington State don't.



Jimmye Turner with the bear who has never forbidden the use of fire as an ecosystem management tool. Photo: Dan O'Brien, USDA Forest Service, Umatilla National Forest, Walla Walla, WA, 1996.

Do civilian visitors to your forest search for areas needing fire to regenerate growth or to improve the habitat for wildland animals? Of course not! When civilians start forest fires, they tend to burn up picnic tables, shade trees, boat docks, tents, outhouses, and occasionally, other campers!

There are many people who would claim that burning down a picnic table or an outhouse is good for the ecosystem, but I'm not arguing that point. My argument is simply this: **Smokey's message is not wrong.** Children should not play with fire (or matches, or lighters). People should be careful with fire, both in the forest and at home. Only people can prevent human-caused fires. It seems so simple. ■

Jimmye Turner is an ignition specialist for the USDA Forest Service, Umatilla National Forest, Walla Walla Ranger District, Walla Walla, WA.

ORIGINS OF ARSON IN NORTHWESTERN SPAIN

Domingo M. Molina



UNIVERSITY OF LLEIDA
SPAIN

In the 1940's, Spain's National Forest Service (NFS) introduced an ambitious reforestation program as part of a general economic package for the whole country. The objectives were to grow wood for the economy and to improve watersheds; however, also included in the program were the improvement of wildlife habitats and grazing lands, the enhancement of landscapes, and the reduction of unemployment. The nation of Spain would benefit by protecting the soil from erosion, creating new goods, and reducing wood imports. There were several perceived advantages for the rural inhabitants of Spain: 1) The program would provide sustainable employment in forestry—the NFS would supply all needed capital while villages would supply the land that remained in their ownership, and 2) villages would receive the net income from logging after they reimbursed a portion of the NFS investment. The major disadvantage was that the villagers would lose grazing rights because as reforestation progressed, trees would occupy the lands where animals had grazed. At the time, most people agreed that for local villagers, the advantages outweighed the disadvantages.

In about 40 years, this reforestation program in Spain changed the use of 8.9 million acres (3.6 million ha), which is 30 percent of the

Many who live in Galicia (northwestern Spain) have been frustrated since the 1940's because of a Government reforestation program that began after the Spanish Civil War. This frustration has caused some individuals to commit arson, which is much more common in Galicia than in the rest of Spain.

wildlands and 7 percent of the whole country (MAPA 1983).

H. S. Kernan (1966), while serving in the U.S. Agency for International Development, wrote in English about the commendable accomplishments of the Spanish foresters. He found that the Spanish reforestation program, then about 20 years old, had an outstanding record of achievements.

In contrast, however, my more recent studies have shown that the weakest, less populated hamlets in Galicia lost their common grazing lands to reforestation programs while stronger hamlets kept their own commons as pasture lands. Loss of grazing lands, lack of opportunities for participation in the decisionmaking process concerning the reforestation program, the perception of unfairness, and a belief



Erosion processes are in evidence in Galicia after a wildland fire because trees are no longer available to keep topsoil from being washed or blown away. Photo: Domingo Molina, University of Lleida, Lleida, Spain, 1987.

Domingo Molina is a professor of Wildland Fire Science and Management at the University of Lleida, Spain.

that individuals should have open access to natural resources led to frustration among the residents of many small hamlets. This frustration led some individuals to commit arson. Consequently, arson is much more common in north-western Spain than in the rest of Spain.

Historical Background

Some wildlands in Spain belong to a hamlet as a whole while other wildlands are the property of every family in a hamlet. In Spanish civil law, the first type of ownership is called "Roman tenure" and the second "Germanic tenure." In most cases, hamlets own land in Germanic tenure while villages' properties are held in Roman tenure.

Villages were created in the 18th century as political entities aggregating sparsely distributed hamlets (ranging from just a few to numerous hamlets). A village is an administrative district that elects a mayor and a town council. Hamlets (also called parishes) have very little political power despite the ownership of property (commons) in either the Roman or Germanic land tenure system. Villages, however, have strong political power because their mayors work directly with the leadership in Spanish Governmental agencies. Many times, the strongest, most populated hamlet becomes indistinguishable from the village, whose administrative apparatus is seated in that hamlet. In other words, the strong hamlet and the village may pursue the same objectives. Because of this political strength, inhabitants of the rest of the hamlets may feel their interests are not defended by their village mayor.

Adding more complexity, during the 1940's the NFS wanted to con-



After a wildfire in Galicia, Chamaespartium tridentatum (L.) P. Gibbs resprouted fairly rapidly. Photo: Domingo Molina, University of Lleida, Lleida, Spain, 1987.

trol use of both public and private forest stands while maintaining the land tenure system. The NFS would have no tenure rights to the land whatsoever. With this control, the NFS would provide for sustainable production (i.e., the harvest in a forest would never exceed the annual growth) while enhancing timber stock (resources), which subsequently would facilitate the growth of timber and pulp industries. Legislation from 1931 enabled the NFS to limit private and public use of wildlands to accomplish such matters of community interest (e.g., for erosion control, wildfire prevention, and wildlife management).

However, these agreements were made in the nondemocratic manner characteristic of that time. The NFS, like other Government agencies, traditionally had preferred to conduct business with elected officials in the villages instead of with every individual in a hamlet. There were no conscious efforts to have local participation and suggestions; generally only the concerns of those close to the sole legal political party reached the NFS.

Most wildlands reforested in Galicia with Government money belonged to hamlets in Germanic tenure, some to villages and the nation, and only 7 percent to individuals. In most cases, reforestation was the result of an agreement between a village and the NFS. As a result, large hamlets (i.e., village administrative centers) were able to use their power (they were better connected with NFS officials) to ensure that the small hamlets lost the most grazing land. Frustration in many small hamlets became the complex result.

Hypotheses

I hypothesize that by using their greater (both legal and illegal) political power, major hamlets in Galicia (i.e., village administrative centers) shifted most of their fair burden (i.e., loss of grazing land) to the weakest hamlets while getting more than their fair share of the benefits (e.g., jobs). It is also my hypothesis that the NFS was not aware of this peculiar village and hamlet power struggle because

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in other parts of Spain, villages are not an aggregation of minor entities but a single, well-defined settlement. I believe the NFS never intended to drastically reduce the area for traditional grazing in a hamlet.

My working hypotheses are:

- The NFS did not understand the complex system of land tenure (i.e., de facto (actual) versus de jure (assumed); village versus hamlet) in Galicia.
- Large hamlets were able to use their power to ensure that small hamlets lost the most grazing land.
- The NFS did not anticipate the unfair nature of the burden among hamlets.
- Many people in small hamlets believed that the NFS would actively discourage the socially accepted, but illegal, appropriation of common land by locals.
- Some people in small hamlets used arson as both a symbolic and a practical tool of resistance.
- Most individuals have traditionally preferred open access to natural resources compared with either local or national regulation.

Wildland Fires in Galicia

Conditions in northwestern Spain are ideal for wildfires, and recent forestry programs such as those altering fire frequency and severity have made forests even more fire prone. Because even-aged pine plantations in Galicia were established through the reforestation program, fires are potentially more severe than where the vegetation pattern is less uniform. In addition, when grazing is reduced in wildlands, catastrophic crown fires are more likely to occur because

The complexity of land tenure systems in northwestern Spain was overlooked or not understood by the National Forest Service (NFS) and other agencies while planning and developing the country's reforestation program. Consequently, arsonist activity has been both a protest against Government take-over of common wildlands in Galicia and a method to change land use for rural inhabitants.

fine grasses accumulate and increase the risk of ignitions. Finally, the northwestern climate stimulates luxurious vegetation growth in winter; typically, such winters are followed by a dry summer period in which both lightning and human-caused wildfires occur.

Arson in Galicia

Arson is much more common in Galicia than in the rest of Spain (MAPA 1986, Serrano 1990). Figure 1 displays recent data showing frequency of wildland fires; it was elaborated from "EGIF," the wildland fire data base of the National Forest Service.

It is important to realize that arsonist activity is a private act (sometimes several persons are involved) and not a collective action; although in some cases, the majority of the hamlet members may either apologize for it or ignore it. Arsonist activity is both a symbolic and pragmatic gesture (see Fernández 1987 and Peluso 1992). It is a protest against Government control of common wildlands (such as reforestation and management of wildlife and game practices), which is seen as loss of local use and control. Also, arson is an attempt to return lands from Government control for timber

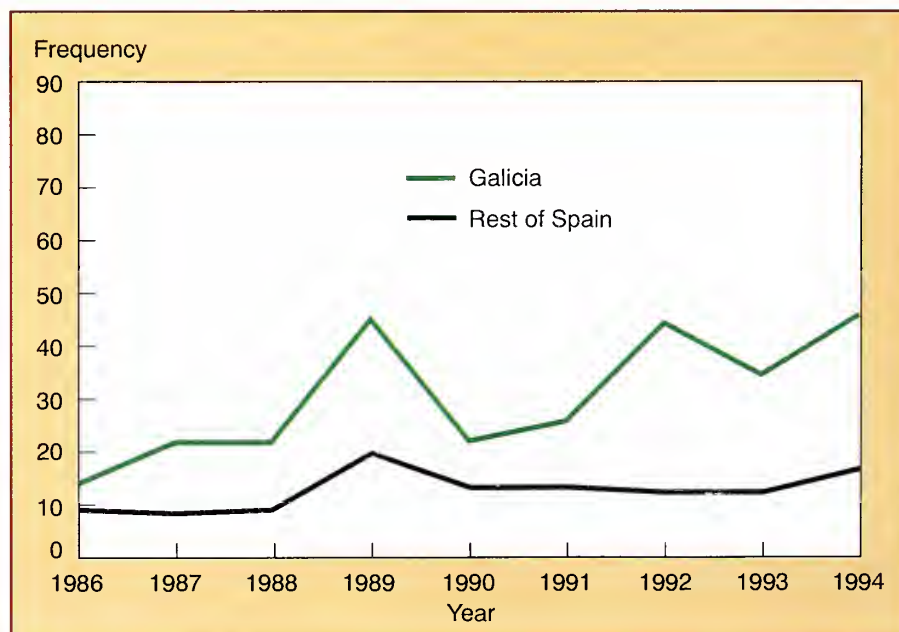


Figure 1—Frequency of wildland fires in Galicia compared to the rest of Spain from 1986 to 1994 (number of fires per 4,000 acres (10,000 ha) of wildlands).

production to local control for pasturage. This study is within the body of theory concerning the struggle for local control of natural resources (*sensu* Cheater 1990, Guha 1990, and Peluso 1992). The subject of the struggle is the rural commons—wildlands used freely for grazing and wood collecting. Individuals who ignite wildfires because they are frustrated with the reforestation programs employ fire for clear economic purposes such as being able to change the land use. For example, a villager might think, “If there is a fire in the forest, we can apply for a permit to buy salvage timber cheaper.”

Personal Observation in the Field

In 1989, I spent the summer in Galicia. My job was to drive the dirt roads to validate and improve upon my previous work identifying different vegetation types from aerial photography of the area. My responsibilities included assessing ecological succession in the vegetation of these wildlands. Although I was not doing social science research *per se*, I paid careful attention to the many arson activities that were known; sometimes arsonists were prosecuted in courts in this area. I was able to perceive the mistrust of local residents towards the NFS and heard many complaints about the agency. Specifically, some rural inhabitants from remote hamlets felt grazing rights had been unfairly taken away and that they no longer had the right to use fire as a tool to stimulate new forage growth for cattle.

Discussion

In 1990, Serrano interviewed numerous individuals in various Galician hamlets. He found that in



Spain's rabbit is the equivalent to Smokey Bear in North America. Here, the rabbit is telling readers to "Prevent Forest Fires."

areas with high numbers of wildfires, residents were more frustrated with reforestation and less concerned about these wildfires than those from locations with fewer wildfires. This was also my impression in my weeks of field study.

The NFS campaign “when the forest is burning, some of yours is burning” is effective only when targeted at those who live in cities. City dwellers often have a distant, quasi-mystical relationship with forests and believe that fire is always bad. They know that in an urban environment, a fire is almost always a tragedy. In contrast, rural people know that for grazing and agriculture, fire is a management tool and not intrinsically bad.

As we have seen, however, some individuals have committed arson to protest against past government actions. It will be very difficult to completely eliminate these protest fires because frustration is also caused by many other dramatic changes occurring in these rural areas. For example, the rural people know their living standards

are not as high as standards of those who live in cities. They are aware of the spectacular economic success in cities during the 1960's. Nevertheless, the NFS can still do much to ease the current situation with policies aimed to facilitate local use (and control) of some resources. It is an accepted fact that locals lost grazing resources due to reforestation. However, local employment in forestry boosted the income of many families, thus helping to avoid the temporal migration quite common in the past. Also, the NFS reforestation brigades built roads to many hamlets that were previously isolated.

It can be argued that rural expectation has grown faster than what the natural resources could support—with or without reforestation. But these rural expectations are not necessarily realistic. While some rural Galicians prefer open access to natural resources versus either local or national regulation, others would argue that open access was the traditional way. However, there were always rules for rational use of common resources

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(e.g., residents could not graze or cultivate their allocated common land for more than 2 or 3 years; they had to be the second generation in the hamlet to apply for a temporary allocation of common land, etc.). Historically, however, not everyone played by the rules as reported in Jordana (1870), Costa (1912), Simón-Segura (1973), Sánchez-Albornoz (1978), Bauer (1980), Villares (1982), Sánchez-Salazar (1988), and Serrano (1990). Specifically, the richer and/or more influential individuals in the hamlet could get allocations to last for many years and later claim in court that the land belonged to them because they had improved it for a long period of time. Usually they would receive a ruling in their favor. Landless rangers could also get the same ruling in courts after being allowed temporary and limited use. Arson in Galicia, although a criminal activity, has been both a protest against the NFS having taken over common wildlands and a consequence of the failure of Government agencies to understand land tenure in all its complexity.

Today, the rural population continues to mistrust new development programs coming from regional or national agencies—even those that are likely to benefit locals. Consequently, rural northwestern Spain has the lowest level of participation in national, regional, and local elections. Arson activities in the 1990's are also a result of numerous new Preserved Natural Areas (PNA's) being established by national, regional, and county Governmental agencies without previous, careful study of the discomfort that new regulations may cause to rural residents already tired of limitations in wildland use and access. These PNA's resulted

FIREFIGHTER ARSON: GAINING CONTROL

Ken Cabe

Editor's note: This article is an update of Ken Cabe's article "Firefighter Arson: Local Alarm" in Fire Management Notes, vol. 56, no. 1, 1996, p. 7-9.

You can often make statistics prove whatever you want. Let's say two-tenths of 1 percent of the firefighters in your State were arrested for arson last year. You could point out that 99.98 percent of your personnel are dedicated, conscientious public servants, and nobody could argue.

When confronted with exactly those figures in 1994, however, the South Carolina Fire Service saw a serious threat to their public credibility. They developed a behavior profile that indicated that most offenders were young, white male volunteer firefighters looking for recognition. Fire Ser-

Ken Cabe is a fire prevention coordinator for the South Carolina Forestry Commission, Columbia, SC.

vice officers used this behavioral information to help identify potential offenders and alerted all fire personnel of the penalties for fire-related crimes.

Via a statewide, closed-circuit teleconference early in 1996, the South Carolina Firemen's Association provided its members with an indepth look at firefighter arson. Immediately following the teleconference, the South Carolina Arson Investigators Association began offering awareness training to any department that requested it. The message was clear: Firefighter arson would not be tolerated in South Carolina.

Did it work? Look at the numbers and draw your own conclusion. Thirty-three firefighters were arrested for arson in 1993, 47 in 1994, 30 in 1995, and in 1996—only 3.

For more information, contact Ken Cabe, P.O. Box 21707, Columbia, SC 29221; tel. 803-896-8820. ■

from legislation passed in the late 1970's and 1980's. Most of these new PNA's are politically oriented to capture votes of environmentally conscious city dwellers. In their study, Erviti and Erviti (1994) concluded that most of these PNA's are cost-efficient for the political candidates. Although Erviti and Erviti did their study in another Spanish region, most people agree that it can be easily extrapolated to the whole nation, which, of course, includes Galicia. For example, the National Confederation of Private Forest Owners has called for 1) a moratorium in the establishment

of new PNA's in the entire country because they feel their interests are being hurt and 2) participation in redefining the purpose of PNA's in Spain.

The Future for Arson in Galicia

Much effort is necessary to clarify the legal rights and responsibilities of those who live in or near wildlands, while at the same time, these inhabitants should be encouraged to participate in local planning issues. Specifically, legislation to protect forests, woodlands, and other wildlands is long

overdue; current legislation has been in place since 1957. Draft legislation in this matter is under way and expected to become law in 1997. Remarkably, forest owners have become involved in this legislation (that was not the case in 1957), which may help to create a more robust law, better accepted by rural inhabitants. Moreover, once the new, basic law on forest, woodland, and wildland protection is passed and a consensus about PNA's is reached, it will be necessary to implement a thorough educational program to ensure local participation in the system. Little can be done if rural residents continue to demand open access to natural resources. Through new legislation and an understanding of it by rural inhabitants, I believe arsonist activity will decrease.

Literature Cited

- Bauer, E. 1980. Los montes de España en la historia. Madrid, Spain: Ministerio de Agricultura. 610 p.
- Costa, J. 1912. El arbolado y la patria. Madrid, Spain: Biblioteca Costa. 184 p.
- Erviti, M.V.; Erviti, J.J. 1994. Incendios forestales y espacios naturales protegidos. Montes. 37: 61-63.
- Fernández, J.W. 1987. The call for the commons: Decline and recommitment in Asturias, Spain. In McCay, B.J., and Acheson, J.M., eds. The Question of the Commons. Tucson, AZ: The University of Arizona Press: 266-289.
- Guha, R. 1990. The unquiet woods: Ecological change and peasant resistance in the Himalayas. Berkeley, CA: University of California Press. 217 p.
- Jordana, J. 1870. Desamortización forestal. Revista Forestal. 3: 256-269.
- Kernan, H.S. 1966. Reforestation in Spain. World Forestry Pub. No. 3. Syracuse, NY: State University College of Forestry at Syracuse University. 52 p.
- MAPA—Ministerio de Agricultura, Pesca y Alimentación. 1983. Anuario de estadística agraria. Madrid, Spain: MAPA. 674 p.
- MAPA—Ministerio de Agricultura, Pesca y Alimentación. 1986. Distribución temporal del peligro de incendios forestales. Madrid, Spain: MAPA. 194 p.
- Peluso, N. 1992. Rich forest, poor people: Resource control and resistance in Java. Berkeley, CA: University of California Press. 321 p.
- Sánchez-Albornoz, C. 1978. El régimen de la tierra en el reino asturleonés hace mil años. Buenos Aires, Argentina: Universidad de Buenos Aires.
- Sánchez-Salazar, F. 1988. Extensión de cultivos en España en el Siglo XVIII. Madrid, Spain: Ministerio de Agricultura, Pesca y Alimentación. 283 p.
- Simón-Segura, F. 1973. La desamortización española del Siglo XIX. Madrid, Spain: Instituto de Estudios Fiscales, Ministerio de la Hacienda. 328 p.
- Villares, R. 1982. La propiedad de la tierra en Galicia: 1500-1936. Madrid, Spain: Siglo XXI de España Ediciones, S.A. 462 p. ■

GUIDELINES FOR CONTRIBUTORS

Editorial Policy

Fire Management Notes (FMN) is an international quarterly magazine for the wildland fire community. *FMN* welcomes unsolicited manuscripts from readers on any subject related to fire management. (See the subject index of the first issue of each volume for a list of topics covered in the past.)

Because space is a consideration, long manuscripts are subject to publication delay and editorial cutting; *FMN* **does** print short pieces of interest to readers.

Submission Guidelines

Authors are asked to type or word-process their articles on white paper (double-spaced) on one side. Try to keep titles concise and descriptive; subheadings and bulleted material are useful and help readability. As a general rule of clear writing, use the active voice (e.g., Fire managers know . . . —**not**—It is known . . .).

Submit articles to either the general manager or the editor. Complete details to reach them follow:

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P.O. Box 96090;
Washington, DC 20090-6090.
Telephone 202-205-0891, fax 202-205-1272
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HOMEOWNER PROTECTION EFFORTS CAN AND DO WORK



Leraas Cook & Associates
Resource Communications Marketing

Judith Leraas Cook

A fast-moving brush fire shoved along by heavy Santa Ana Winds crackled from Calabasas to Malibu and the Pacific Ocean on Monday [October 21, 1996], blackening approximately 10,000 acres [4,000 ha] of brush and forcing widespread evacuations. While the fire swept past numerous expensive canyon homes on its way to the sea, firefighters reported that only two outbuildings had burned. No injuries were reported. . . . At least some of the credit for the minimal damage may go to brush clearing and other precautions taken by canyon residents following a devastating fire in 1993 that destroyed hundreds of homes in a similar march to the sea. 'A lot of it was luck of the draw, the way the fire was moving, but a lot of it was fire prevention,' said Los Angeles County Supervisor Zev Yaroslavsky. 'These kinds of things make all the difference in the world'"—Los Angeles Daily News, October 22, 1996.

While no home is completely fire-safe, all fire managers have seen examples of protection efforts that have paid off. Whether it was vegetation manipulation, thoughtful landscaping, fire-resistant construction materials, or placement of a home away from the top of a ravine, homeowners have shown that they can use good judgment



Post-burn aerial views show an area of the Los Padres National Forest in California where firefighters were able to hold the fireline and protect homes because the fuel load was relatively low in this neighborhood, e.g., there was sufficient "defensible space" around structures. Photo: USDA Forest Service, Washington, DC, 1990.

in dealing with wildland fire. Because homeowners have learned skills that will protect them, their homes, and their families if a wildland fire occurs, the fire community has recently begun to refer to those homeowners as "firewise."

People who discover specific approaches to protecting themselves in a wildland environment and understand the tradeoffs they will experience are inclined to adopt firewise practices. Such was the case with the canyon homeowners previously mentioned. They became aware of the likelihood of losing their homes to wildfire, and they made a community decision to modify their surroundings to decrease the probability of catastrophic loss. Why? Because they recognized fire's role as a natural and inevitable phenomenon. They

learned to look at their environment in a new way—to find a niche into which they could fit. They decided how much time and energy they were willing to spend. They knew—as do fire managers—that their efforts might not stop a fire. So they decided which fire-protection measures they were willing and able to adopt that would be the most effective should a wildfire come their way. They did some aggressive vegetation management. And, in October of 1996, they were glad they had made the effort.

Changing a Community's Attitudes Is Not a New Concept

Teaching a community firewise techniques is not significantly different from helping drivers and bicyclists remember to stop for a red

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light. We all adopt habits and attitudes. Sometimes we change. In fact, our entire society changes constantly. Consider the following:

- **MADD**—Mothers Against Drunk Driving is an organization founded by a woman who lost a child in an automobile accident caused by a drunk driver. Her work (and that of others who joined her organization) turned our country's attitudes about drinking and driving around and made drunk driving penalties stiffer in most parts of the United States.
- **Smoking**—A major change has swept the United States concerning smoking. For instance, most public buildings now prohibit smoking or at least confine smokers to specifically designated areas. Consider the community in which you live: What is the prevailing attitude toward tobacco and the damaging effects of smoke?
- **Recycling**—While many of us grew up hearing the axiom,

"Waste not, want not," most of us did not make our unused paper, plastic, and aluminum available for recycling efforts. Yet this is now occurring all over the United States. We don't recycle to be thrifty; we do it for the future of generations to come.

"We will modify our living conditions if we can perform well-defined tasks and understand the gains that we will potentially enjoy."

Changing a community's attitudes can be tedious. Altering its practices can be even more laborious—and infinitely more frustrating. It is difficult for any of us to modify our own habits, but we can learn to do so if we work at it. Consider how you felt about the above topics as little as 10 years ago.

Learning Firewise Behavior Takes Time

It is easy for fire managers to complain about the resistance of those who live in fire-prone areas when it comes to the adoption of firewise practices. But it is time to take another look at the issue. Many of the people who appear "not to care" are simply overwhelmed by the magnitude of the problem they face. In other words, they don't know where—or how—to start protecting themselves. However, as the Los Angeles Times article explains, individuals will modify their living conditions if they are given well-defined tasks and understand the gains that they will potentially enjoy.

Creating a Firewise Ethic Requires Perseverance

Helping a community create a firewise lifestyle is by no means a rapid process. The final result is one of cumulative impact. This means that final firewise successes come from the accumulated benefits of many small, seemingly insignificant actions along the way. The key to success is to ensure the small steps taken are not random. They must be well planned, well timed, and well executed. When the facilitator of change moves forward carefully with consistent efforts toward a goal, an integration of elements both large and small occurs. This integration is important, because if people are to learn to take responsibility for themselves in fire-prone environments, they need to see and understand the "whys," "hows," and "wherefores" of fire—smoke, embers, ladder fuels, and all.



This home was saved from fire on the Bear Lodge District in the Black Hills National Forest in Custer, SD. Note the burned trees in the foreground. Photo: USDA Forest Service, Washington, DC, 1988.

Continued on page 26

You Are Critical to a Firewise Success Story

As a member of the fire community, you are of utmost importance to the chance of your community's becoming firewise: First, you are a critical community resource for distributing fire protection information. Second, by effectively and continually communicating with others, you can foster a significant increase in community understanding of the fire-protection issue. Third, you can initiate action with citizen groups by identifying who wants to hear your message and by working with those individuals to get projects started—and completed. Most communities and their residents respond favorably to a task that is well defined and will produce visible benefits.

Your role is to help people to help themselves. Often this is as simple as providing information to people who need it. Printed materials are available in abundance, ranging from brochures such as “Protecting Your Home from Wildfire” to flyers containing information about backyard burning. You can ensure that target audiences receive these materials. People can even turn to their computers for information—they simply need to know where to go for what they need and how to implement what they learn.

Give Homeowners Specific Project Ideas

Try promoting the “Firewise Landscaping Checklist” to service groups and neighborhood organizations. It is available from the National Interagency Fire Center (NIFC) in Boise, ID, and on the

FIREWISE LANDSCAPE MAINTENANCE

- Mow your lawn regularly to keep dry grass to a minimum around your house.
- Keep all trees and shrubs pruned, and remove dead branches. Remove limbs that are lower than 6 to 10 feet (2 to 3 m) from the ground so a ground fire is less likely to ignite them.
- Promptly dispose of all lawn cuttings and pruning debris. Remove leaf clutter from your roof, your eaves, and from close proximity to your house.
- If you have one, be sure your irrigation or sprinkler system is well maintained.
- Store firewood away from structures. It is no more than fuel for a wildland fire.
- Practice safe refueling and regular maintenance of garden equipment in order to reduce the likelihood of an equipment fire.
- Store and use flammable liquids—such as lawnmower fuel—properly.
- Use care when fertilizing your property and controlling pests. Some fertilizers and chemicals are flammable. Read the labels.
- Use your ashtray if you smoke, and carefully dispose of all smoking materials.
- Observe local regulations regarding (1) disposal of debris—especially trash burning, (2) fire-safety requirements for equipment, and (3) vegetative clearances (the amount of free space required by fire equipment, which is mandated in some areas of the United States.)

Internet it is linked to the Firewise Home Page: <http://www.firewise.org/>. The checklist includes three sections:

- “Things to consider when designing and installing a firewise landscape,”
- “To create a firewise landscape, remember that the primary goal is fuel reduction,” and
- “Things to consider when maintaining a landscape.”

For homeowners with mature landscapes, the “Maintenance” section is a good starting place for becoming firewise (see box). They know what is on their property and with little help can identify hazards there. If implemented conscientiously, proper maintenance will significantly reduce the fuel load

and other hazards around structures.

Remember: People have to start somewhere or they will not start at all. Work with service clubs, Scout troops, or other local organizations. Build coalitions of interested groups. Give them a list of well-defined tasks. Initiate brush-clearing projects; devote days to helping senior citizens with maintenance problems; organize pruning demonstrations. Be sure the people working with you know the approximate time commitment required of them, exactly where the job needs to be done, and which tools are needed. Let them know what benefits they will enjoy as they accomplish each task. Help them become firewise! ■

WILD FLOWERS RATHER THAN WILDFIRES

Jeannette Hartog

Several years ago in Nevada, Ron Barrett, an employee from the USDI Bureau of Land Management (BLM), suggested planting wild flowers as defensible space around homes in wildland-urban interface areas. One of Ron's objectives was to help people living in wildlands become aware of the need to control vegetation around their homes. He also felt that using wild flowers was an inexpensive, ecological way to produce defensible space that would blend in with the area's vegetation.

Planting wild flowers encouraged homeowners to clear away heavy accumulations of brush and grass no less than 30 feet (9 m) around their homes. The wild flowers that would grow in this space were a special variety, indigenous to the area. Barrett knew that the seeds would germinate 4,000 to 8,000 feet (1,200 m to 2,400 m) above sea level to become fire-resistant plants that would grow well in drought conditions. He also knew they were easy and inexpensive to plant.

The seed packets featured artwork designed by Mike Whalen, Winnemucca BLM. As shown in figure 1, the packets contained the prevention and protection messages: "Defensible Space" and "You Can Make A Difference!" On the back of the packet, the seed contents were listed with "Other Hints to Protect Your Home." Interagency personnel distributed

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In Lava Hot Springs, ID, "Not only did a beautification project result, but also—and more importantly—this community reduced hazards around homes and private property that were at risk from wildfire."



Figure 1—Front and back of the seed packet distributed by interagency groups that want to encourage those who live in the wildland-urban interface to protect themselves from wildfires. Illustrator: Mike Whalen, Winnemucca Bureau of Land Management, Winnemucca, NV.

the packets of seeds at events such as garden shows, fairs, and homeowner meetings in areas close to interface locations throughout Nevada.

In 1996, the project spread to Idaho and was received with the same success as in Nevada. In fact, Lava Hot Springs, ID, a resort town with a growing population close to wildlands, adopted "wild flowers" as a community project. Not only did beautification result, but also—and more importantly—this community reduced hazards around homes and private property that were at risk from wildfire.

The wild flower project in Idaho allowed fire organizations to work together as well as with their publics towards a common goal. It also opened doors for discussions on developing fuel breaks, reducing hazards from dead and overgrown vegetation, and developing an adequate water supply if and when a

wildfire does occur in an interface area.

Since the project began in 1992, it continues to receive positive comments from those who have participated in it. The seed is certified to be 98 percent weed free, and range conservationists give their approval to the mix of seed being used.

The Great Basin Fire Prevention Working Committee selected "wild flowers" as one of its projects to sponsor for 1997. Forest Service, BLM, and State personnel distributed the packets throughout the Great Basin with seeds selected for use within interface areas in Idaho, Nevada, and Utah. The committee sees this activity as an opportunity for fire organizations to help landscape architects and local nursery workers promote defensible space around homes in the interface. ■

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